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REMARKS

I. Restriction under 35 USC 121

The Examiner required restriction to two groups as follows:

Group I – Claims 1-9 and 13-15 directed to method of modifying an extruded or molded object

Group II – Claims 10-12 directed to an extruded composition

The groups were stated to be related as process of making and product made, and to be distinct in that the composition could be made by a different process. Further an election of species was required.

Applicants hereby affirm the election of Group I. Claims encompassing this invention are claims 1-9 and 13-15. Applicants hereby further affirm the election of printing as the species. Claims reading on this species are claims 1-9 and 13-15.

II. Rejection under 35 USC 112

Claim 13 was rejected under 35 USC 112, second paragraph, as being indefinite in use of the phrase “an improved method”. Applicants respectfully traverse this rejection.

Claim 13 is in the Jepson claim format. This claim format is directed to an improvement type invention wherein the old elements of a known composition, process or combination are set forth in the preamble, followed by a transition clause such as “wherein the improvement comprises”, and the new or modified elements reciting the improvement are set forth after the transition clause in the body of the claim. Thus the basis for improvement is the known process as recited in the preamble.

In claim 13, Applicants recognize that making molded or extruded objects is a known process, but are incorporating the new element of using a heating and cooling step to permit modification of a repellent surface. In order to clarify claim 13 and to advance prosecution, Applicants have amended claim 13 to delete use of the words “An improved”, to clarify that the surface is repellent prior to the modification step, and to clarify the heating and cooling is after extrusion or molding. Applicants respectfully submit that claim 13, as amended herein, does particularly point out and distinctly claim the invention in compliance with 35 USC 112, second paragraph.

III. Rejection under 35 USC 102

Claims 1-6 and 13-15 were rejected over US Patent 6,063,474 of Raiford et al. Applicants respectfully traverse this rejection.

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Raiford et al. teach forming a composition and imparting thereto repellency to low surface tension fluids by mixing a polymer and a fluorochemical compound and melt extruding the mixture in the form of an object, such as a filament, fiber, nonwoven fabric or web, film, or molded article. The purpose is to impart surface repellency to the object. The extruded object can be optionally heat treated in a curing step to effect migration of the fluorochemical additive to the surface of the object to improve its effectiveness in imparting repellency. See Column 6, lines 49-52. Thus the process of Raiford et al. is useful to impart repellency to low surface tension fluids to polymer articles. See Column 6, lines 65-68.

In contrast, Applicants' claimed method uses the melt extruded article of Raiford as a starting material. The extruded or molded object of Raiford, which has a surface which is repellent to low surface tension fluids, is heated in Applicant's method in order to suppress this repellency. The repellency is suppressed in order to more easily perform modification of the surface. For example, printing on a surface that is repellent is more difficult than printing on a surface without repellency, because a surface having repellency will repel the ink or printing material used. Applicants claimed method temporarily suppresses the repellency imparted by Raiford et al. in order to modify the surface, for example by printing on it, before the repellency returns. Applicant has amended claim 1 to clarify that the molded object already possesses surface repellency to low surface tension fluids. Raiford et al. do not teach or suggest any means to suppress repellency. Raiford et al. in fact, teach a method for imparting repellency to the surface of a melt extruded object, and teach that heating an object in an annealing step just after its ejection from the mold may improve imparting repellency to the object by causing the fluorochemical additive to migrate to the surface. This is the direct opposite of Applicants' claimed method wherein repellency is suppressed. Thus, Applicants maintain that claims 1- 6 are novel over Raiford et al.

Example 1 of Raiford et al. is cited by the Examiner as teaching the method of modifying a surface of Applicant's claim 13. In fact, Example 1 teaches the synthesis of a compound by mixing a compound $(FCCF_2)CH_2CH_2OH$ with a UNICID polymer, and melt extruding the mixture to prepare a product. The product when tested had a repellency rating of 40 initially and of 90 -100 after annealing about one week after processing. See Table 2. Thus, Example 1 of Raiford et al. demonstrates imparting repellency to an object, which repellency is increased by heating or annealing. This Example teaches nothing about suppressing repellency. Thus, Applicant maintains that claims 13 - 15 are novel over Raiford.

IV. Rejection under 35 USC 103

Claims 7 - 9 were rejected under 35 USC 103(a) as unpatentable over US Patent 6,063,474 of Raiford et al. as applied to claims 1 - 6, in view of US Patent 6,969,166 of Clark et al. Applicants respectfully traverse this rejection.

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The Examiner cited Raiford et al. as teaching modifying a surface by heating a mixture of a polymer and a fluorochemical, and cited Clark et al. as teaching printing on a molded article. Raiford et al. teach imparting surface repellency to low surface tension fluids to a melt extruded object. Raiford teaches imparting repellency to a surface. In Example 1 Clark et al. teach inkjet printing onto a vinyl sheet at room temperature. The vinyl sheet did not contain a fluorochemical, thus did not have repellency to low surface tension fluids. Thus, no repellency was present to resist the ink used for the printing.

If one combines the printing process of Clark et al. with the Raiford et al. melt extruded object which does have surface repellency, one does not obtain Applicant's invention. Clark et al. teach printing onto a surface at room temperature. Clark et al. teach printing onto a surface that does not have repellency to low surface tension fluids. Thus, there is no teaching or suggestion in this combination of patents of heating an object which has surface repellency to suppress the repellency prior to the printing process. Raiford et al. teach heating can increase imparting repellency. Clark et al. teach printing at room temperature by the topical application of two coatings having different surface energies to control fluid flow. No heating step is involved. Thus, this combination of references does not teach or suggest Applicant's claimed invention. Applicant's claims are directed to heating the surface to suppress repellency prior to applying a surface modifier. The combination of Raiford et al. and Clark et al. does not teach or suggest any means of suppressing repellency prior to surface modification. Thus, Applicants' claimed invention provides the unexpected advantage of suppressing repellency so that the modification of the surface can be effected more easily. Applicants therefore maintain that claims 7-9 are not obvious over this combination of references.

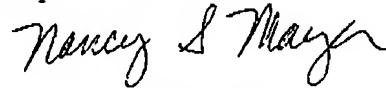
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V. Conclusions

Applicants respectfully maintain that claims 1-9 and 13-15 are patentable over the cited art, individually or combined, and request that a patent be issued on these claims. Should any questions arise, the Examiner is invited to contact Applicants' attorney at the number listed below.

Respectfully submitted,



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